

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TEXARKANA DIVISION**

HITACHI MAXELL, LTD.,

Plaintiff,

v.

HUAWEI DEVICE USA INC. and HUAWEI
DEVICE CO., LTD.,

Defendants.

Case No. 5:16-cv-00178-RWS

LEAD CASE

JURY TRIAL DEMANDED

HITACHI MAXELL, LTD.,

Plaintiff,

v.

ZTE CORPORATION and ZTE USA INC.,

Defendants.

Case No. 5:16-cv-00179-RWS

JURY TRIAL DEMANDED

**DECLARATION OF SCOTT ANDREWS IN SUPPORT OF DEFENDANTS'
RESPONSIVE CLAIM CONSTRUCTION BRIEF**

1. I, Scott Andrew, do declare as follows:
2. I have been retained by counsel for ZTE (USA) to provide this declaration in support of the Defendants' Responsive Claim Construction relating to certain claim terms in U.S. Patent No. 6,748,317 titled "PORTABLE TERMINAL WITH THE FUNCTION OF WALKING NAVIGATION" (the "317 Patent"). If called as a witness, I could and would testify competently to the matters set forth herein.

3. My opinions are based on my years of education, research and experience, as well as my investigation and study of relevant materials. The materials that I studied for this declaration include all exhibits of the petition.

I. BACKGROUND AND QUALIFICATIONS

4. Attached hereto as Appendix A is a true and correct copy of my *curriculum vitae*. I have summarized by educational background, work experience, and relevant qualifications in this section.

5. I am currently the Technical Partner of Cogenia Partners, LLC. For the last 20 years, I have focused exclusively on the development and management of technologies in support of Intelligent Transportation Systems.

6. I received my Master of Science degree in Electrical Engineering from Stanford University in 1982 and a Bachelor of Science degree in Electrical Engineering from University of California, Irvine in 1977.

7. From 1983 to 1996, I worked at TRW, Inc. as Director of System Engineering & Advanced Product Development. My responsibilities included leadership and overall management of advanced development programs, development of business strategy and business plan, and overall management of customer and R&D programs.

8. From 1996 to April 2000, I worked at Toyota Motor Corporation, Japan as Project General Manager in the R&D Management Division. My responsibilities included the conceptualization and development of multimedia and new technology products and services for Toyota's future generations of passenger vehicles in the United States and Europe. Heavy emphasis was placed on strategy for information systems, and on development of technical concepts for computing and Internet oriented systems.

9. While at Toyota Motor Corporation, I was also responsible for leading Toyota's US Automated Highway Systems program, management of technical contracts with Carnegie Mellon University Robotics Lab (Image based collision warning systems), and the development of Toyota's position on the US Intelligent Vehicle Initiative.

10. In April 2000, I founded Cogenia, Inc. My responsibilities as the President and CEO of the company included development of business concepts and plans, corporate administration including financial and legal management, leadership of the executive team in product development, fundraising, business development, organizational development, and investor relations.

11. From December 2001 to present, I have been the Technical Partner at Cogenia Partners, LLC. In this role, I have consulted with all of the major carmakers, and many leading consumer products and services companies in support of the creation and delivery of intelligent transportation systems (ITS), safety applications, and mobile devices.

12. At Cogenia Partners, LLC., my responsibilities include: Systems engineering, business development and technical strategy consulting supporting automotive and information technology.

13. My current engagements at Cogenia Partners, LLC. include:

- Subject matter expert of the development of security systems management operations for connected vehicle on behalf of the U.S. DOT National Highway Traffic Safety Admin. (NHTSA).
- Technical lead for connected vehicle performance measures development project for the U.S. DOT National Highway Traffic Safety Admin. (NHTSA)

14. A complete list of current and past engagements at Cogenia Partners, LLC. is provided in my *curriculum vitae*, which is attached as Appendix A.

15. I have published more than 20 articles, and am an inventor or co-inventor of 13 issued patents.

16. My professional affiliations include:

- Society of Automotive Engineers (SAE)
- International Institute of Electrical and Electronic Engineers (IEEE)
- Institute of Navigation (ION)
- International Council on Systems Engineering (INCOSE)
- IEEE Standards Association

17. In addition, I have 12 years of experience severing as a technical expert witness for patent litigation. I have been involved in district court patent cases, ITC cases, IPRs and Re-examinations. My practice areas include: Navigation and positioning systems, automotive control systems and user interface technologies, location based services and systems, digital maps, GPS technology, traffic information systems, Intelligent Transportation Systems (ITS), etc. A detailed summary of litigation experience and key practice areas is provided as Appendix B.

II. LEVEL OF ORDINARY SKILL IN THE ART

18. In rendering the opinions set forth in this declaration, I was asked to consider the patent claims and the prior art through the eyes of a person of ordinary skill in the art. I considered factors such as the educational level and years of experience of those working in the pertinent art; the types of problems encountered in the art; the teachings of the prior art; patents

and publications of other persons or companies; and the sophistication of the technology. I understand that a person ordinary skill in the art is not a specific real individual, but rather a hypothetical individual having the qualities reflected by the factors discussed above.

19. In my opinion, a person ordinary skill in the art, at the time of the '317 Patent, would have a bachelor's degree in computer science, computer engineering, electrical engineering, or a related field, with two years of experience in navigation, GPS technology and computer programming. Extensive experience and technical training may substitute for educational requirements, while advanced education such as a relevant MS or PhD might substitute for experience.

III. MATERIAL CONSIDERED

20. I have considered the following information in forming my opinions:

- a. The '317 Patent;
- b. The Prosecution History of the '317 Patent;
- c. P.R. 4-3 Joint Claim Construction and Prehearing Statement (dated Aug. 31, 2017); and
- d. Plaintiff's Opening Claim Construction Brief (dated Oct. 2, 2017)

IV. UNDERSTANDING OF THE LAW

21. I understand that the claims of a patent are presumed to be valid, and that invalidity of a claim must be proven by clear and convincing evidence.

A. Claim Construction

22. I understand that the claims of the patent define the limits of the patentees' exclusive rights. In order to determine the scope of the claimed invention, courts typically construe (or define) claim terms, the meaning of which the parties dispute. My purpose in submitting this declaration is to assist the Court in its construction of the disputed claims based

upon how a person of ordinary skill in the art at the time the patent applications were filed would have understood those claims.

23. I understand that claim terms should generally be given their plain and ordinary meaning as understood by one of ordinary skill in the art at the time of the invention and after reading the patent and its prosecution history. Claims must be construed, however, in light of and consistent with the patent's intrinsic evidence. Intrinsic evidence includes the claims themselves, the written disclosure in the specification, and the patent's prosecution history, including the prior art that was considered by the United States Patent and Trademark Office ("PTO").

24. The language of the claims helps guide the construction of claim terms. The context in which a term is used in the claims can be highly instructive.

25. The specification of the patent is the best guide to the meaning of a disputed claim term. Embodiments disclosed in the specification help teach and enable those of skill in the art to make and use the invention, and are helpful to understanding the meaning of claim terms. For example, an inventor may attribute special meanings to a term by specifically defining it or otherwise incorporating such a definition in the specification or file history. However, limitations should not be imported from the specification into the claims.

26. In the specification, a patentee may also define his own terms, give a claim term a different meaning than it would otherwise possess, or disclaim or disavow claim scope. A claim term is generally presumed to possess its ordinary meaning. This presumption, however, does not arise when the patentee acts as his own lexicographer by explicitly defining or re-defining a claim term. This presumption can also be overcome by statements, in the specification or prosecution history of the patent, of clear disclaimer or disavowal of a particular claim scope.

27. I understand that the specification may also resolve any ambiguity where the plain and ordinary meaning of a claim term lacks sufficient clarity to permit the scope of the claim to be ascertained from the claim words alone.

28. I understand that the prosecution history is another important source of evidence in the claim construction analysis. The prosecution history is the record of the proceedings before the PTO, including communications between the patentee and the PTO regarding the patent application. The prosecution history can inform the meaning of the claim language by demonstrating how the patentee and the PTO understood the invention and whether the patentee limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be. I understand that a patentee may also define a term during the prosecution of the patent. The patentee is precluded from recapturing through claim construction specific meanings or claim scope clearly and unambiguously disclaimed or disavowed during prosecution.

29. I understand that extrinsic evidence may also be considered when construing claims. Extrinsic evidence is any evidence that is extrinsic to the patent itself and its prosecution history. Examples of extrinsic evidence are technical dictionaries, treatises, and expert testimony. I understand that extrinsic evidence is less significant than the intrinsic record in determining the meaning of the claim language. I understand that extrinsic evidence can be useful to provide background on the technology at issue, to explain how an invention works, to ensure that the understanding of the technical aspects of a patent is consistent with that of a person of ordinary skill in the art, or to establish that a particular term in the patent or prior art has a particular meaning in the art.

B. Indefiniteness claims under § 112, ¶ 2

30. I understand that a claim limitation is indefinite if the claim, when read in light of the specification and the prosecution history, fails to inform with reasonable certainty persons of ordinary skill in the art about the scope of the invention at the time the patent application was filed.

31. I understand that the claim language might mean several different things, but even if a definition is supported by the specification, the claim is still indefinite if a person skill in the art cannot translate the definition into a precise claim scope.

32. I understand that the definiteness requirement mandates clarity but recognizes that absolute precision is impossible.

C. “Means-plus-function” claims under § 112, ¶ 6

33. I understand that claim terms may be written in a means-plus-function format. I understand that use of the word “means” followed by a recited function creates a presumption that the claim limitation is in means-plus-function format. I understand that the presumption that a claim limitation is a means-plus-function limitation can be rebutted by showing either (1) the claim phrase sufficiently recites a definite structure for performing the function; or (2) “means” claim language exists without recitation of a function.

34. I understand that although the statute refers to the words “means for,” those words are not required for a term to be subject to § 112, ¶ 6. The absence of these words in the claims of a patent creates a rebuttable presumption that § 112, ¶ 6 does not apply. However, such presumption can be overcome if the claim term fails to recite sufficiently definite structure or recites function for performing that function. Stated another way, the presumption may be overcome by using a term instead of “means” that is “a nonce word or a verbal construct that is not recognized as the name of structure.” The words of the claim must be understood by person skill in the art to have definite meaning as the name for structure.

35. I understand that, where there is no corresponding structure for a means-plus-function claim limitation disclosed in the specification of a patent, that claim limitation is indefinite. I understand that the absence of structure from the patent's specification cannot be cured by resorting to the knowledge of a person of ordinary skill in the art.

36. I understand that for means-plus-function limitations that are performed on a computer, the simple disclosure of a general purpose computer is not sufficient structure to render the claim limitation definite. Rather, a patent claim that includes a computer-implemented means-plus-function limitation must disclose an algorithm for performing the claimed function; in the absence of a disclosed algorithm for performing the claimed function, the claim limitation is indefinite. Because general purpose computers can be programmed to accomplish a function in multiple ways, merely disclosing a general purpose computer does not provide a sufficient limit on the scope of the claim when a means-plus-function limitation is used. The corresponding structure for a computer-implemented means-plus-function limitation is not a general purpose computer, but rather an algorithm that turns the general purpose computer into special-purpose computer or microprocessor that is programmed to perform the claimed function. I understand that the claimed limitation will be indefinite if the specification does not disclose an algorithm in sufficient detail for performing the claimed function.

V. OPINIONS ON CLAIM CONSTRUCTION

A. *“walking navigation”*

Defendant's Proposed Construction	Plaintiff's Proposed Construction
“display of information to assist a user in walking, not driving, in a system that is not usable in an object car that is running on a road”	“information to navigate a user who is walking”

37. The '317 patent specification repeatedly and exclusively describes its system as one for walking navigation. The term "walking" is used multiple times in the specification; in contrast the term "driving" is never used. The closest is the statement that the invention is different from navigation systems for an object car "running on a road." Specifically, in the background section of the patent, the inventors assert there "are also many systems under development to be used for supplying the GPS (Global Positioning System). For example, a car navigation system is to be mounted on a car is too large for a walker to carry around. In addition, because the [car] navigation system premises that the system is used while the object car is running on a road, *it cannot be used as a walker's navigation system as is.*" '317 Patent at 1:31-38.

38. I understand that words in a claim are to preferably be given some meaning and there are not generally superfluous words in claims. Here, "walking" means something. As an ordinary meaning, one would expect it to exclude non-walking (e.g., driving, flying, etc.). However, the specification does not fully set out the contours of what the inventors believe to be excluded from the term walking. That is, are all non-walking activities excluded? Flying? Skipping? To be conservative, I have focused on the specific activity the specification does in fact distinguish from walking – operation of car. As shown above, the specification makes plain that the invention is different from (and does not include) driving. In my opinion, a person of ordinary skill in the art, reading the specification and other intrinsic evidence, would conclude that the inventors have expressly disavowed driving systems from the scope their invention.

39. In my opinion the term "walking navigation" concerns "display of information to assist a user in walking, not driving, in a system that is not usable in an object car that is running on a road".

40. The specification makes clear that a walking navigation system is for walkers/users to carry around while walking. A driving navigation system associated with a car comes up only in one example in the background of the invention section, and the example clearly identifies that the invention is designed to overcome the problems associated with such a system. For example, that such systems cannot be used as a walker's navigation system. '317 Patent at 1:31-38.

41. The patent nowhere describes a navigation system that is designed be used for both walking and driving navigation. In fact, using the navigation system of the patent for driving is not described or discussed in the patent specification. Maxell states: "For example, the '317 Patent describes several specific examples of "walking navigation," and each example entails providing information that navigates a user that is walking.", except this provides no insight as to how this navigation process or the need of the user would be different if walking or driving.

42. In my opinion, none of the examples the plaintiff asserts about "Walking Navigation" apply only to walking as opposed to driving or other activities. The three examples cited by the plaintiff, "Neighborhood Guidance Service", "Meeting by Appointment Guidance Service", and "Present Place Guidance Service" are all features that have been provided in vehicle based systems since well before the application filing data of the '317 patent. For example, the 1996 Acura RL navigation system, a vehicle based navigation system, provided a point of interest search function, wherein the system would present a list of facilities meeting the user's specification (e.g. restaurants, hotels, hospitals, parks, etc.) ranked by distance from the vehicle's current location. This is equivalent to the referenced "Neighborhood Guidance Service", and "Present Place Guidance Service". As for the "Meeting by Appointment Service"

the 1998 Toyota MONET system, available in 1999 Toyota vehicles in Japan provided a feature wherein a user could send a destination for a meeting from their PC, via email, to the in-vehicle MONET navigation system, so that the driver could set that location as the destination and subsequently be guided to that location to meet the sender.

B. [a device connected to a server,] “*said device connected to said server outputting said location information and said direction information and receiving retrieved information based on said outputted information at said server.*”

Defendant’s Proposed Construction	Plaintiff’s Proposed Construction
<p><u>Indefinite</u></p> <p>This is a means-plus-function element to be construed in accordance with 35 U.S.C. § 112, ¶ 6.</p> <p><u>Function</u>: outputting said location information and said direction information and receiving retrieved information based on said outputted information at said server</p> <p><u>Structure</u>: insufficient corresponding structure is disclosed</p>	<p>Plain and ordinary meaning</p>

43. This claim term was not discussed in Plaintiff’s Opening Claim Construction Brief, and thus I do not know what the basis for their position is and thus cannot, at this time, fully rebut any position Plaintiff may have on the construction. .

44. In my opinion, this phrase is a means-plus-function limitation because it does not connote sufficiently definite structure to one of skill in the art. In addition, a person of ordinary skill in the art reading the specification would not be able to identify any corresponding structure in the specification for outputting said location information and said direction information and receiving retrieved information based on said outputted information at said server. Accordingly,

it is my opinion that a person would not understand with reasonable certainty what structure is being claimed.

45. The term “a device connected to a computer” does not have an accepted and ordinary meaning in the art. It does not refer to specific structure and a person of skill in the art, would just consider “device” as a generic term like “means.” The term “device” is a non-structural, nonce word that is tantamount to using the word ‘means’ because it does not connote sufficiently definite structure.

46. Although the phrase does not use the word “means,” the phrase also does not recite sufficiently definite structure for performing the claimed function of outputting said location information and said direction information and receiving retrieved information based on said outputted information at said server. For example, Claim 6 requires a “device for getting location information denoting a present place of said portable terminal” and “a device for getting direction information denoting an orientation of said portable terminal.” These devices are identified, for example in Figure 10 of the patent specification as items 78 and 77 respectively. They are described, minimally, in the specification (*see, e.g.*, Col. 9, lines 40-59). I note that while these devices are described as potentially being external to the portable device itself (*see e.g.*, Col. 9, lines 59-63), there is no mention that these functions might be performed by a remote server, and no description of how such a remote server might obtain any information relating to the present position or orientation of the portable device.

47. The “said device connected to said server” is claimed (e.g., claim 6) as outputting this location and direction information, and receiving “retrieved information based on said outputted information” yet there is no description of how this location and direction information is outputted, what element receives it, and what element subsequently retrieves it and provides it

to the device. To be sure, there is, in Figure 10, an identified “device for data communication”, but nowhere in the patent is there described a “device connected to a server”, and nowhere is the composite of the “device for data communication”, the “device for getting location information” and the “device for getting direction information” described as comprising a “device connected to a server”, nor is the overall portable terminal described as somehow fulfilling this structure. In fact, the description that one of the location, communication and direction functions may be external to the portable terminal further confuses what specific structure is being referenced by this claim term.

48. One of ordinary skill in the art would not understand the term “a device,” standing alone, to provide sufficiently definite structure, because much like a generic term, “a device” is merely a construct that is often used by person skill in the art that is equivalent to the word “means.” The term “a device” is generic that could be anything from a computer device to a display device.

49. Furthermore, the claim term includes software steps, such as outputting location and direction information and receiving retrieved information and the specification does not specify any corresponding algorithm or structure, nor does it reference any industry standards that a practitioner might apply to implement these steps. Figures 2, 6, and 7 all provide various descriptions of internal algorithms for performing some claimed functions, but none of these describe the steps or logical operations required to output location and direction information, or to what entity this information is outputted, and they also do not describe the steps associated with retrieving information based on this outputted information, or where it is retrieved from.

50. Thus, it is my opinion that this phrase is a means-plus-function limitation, and the claim does not itself recite sufficient structure to perform the recited functions. .

51. Moreover, no specific structure – aside from the generic description – is provided in the specification for performing the recited functions. Nor is there an algorithm disclosed for performing any of the software steps.

52. Thus, in my opinion the claim term is a means-plus-function term and there is insufficient structure disclosed in the specification to support the recited functions. As such, it is my opinion that the claims that recite this term (both independent and dependent claims) are invalid.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge and that this declaration was executed on October 23, 2017.



Scott Andrews

Executed: October 23, 2017

APPENDIX A

Scott Andrews

(650) 279-0242

scott@cogenia.com

Petaluma, CA

Summary

Creative, energetic, and innovative internationally recognized technical executive experienced in general management, systems engineering, advanced product development, advanced technology, business development, strategic planning, and program management

- Vehicle Electrical/Electronics Systems
- Vehicle Information Systems
- Communications Systems
- ITS and Related Industries
- Program and Project Management
- Enterprise Software
- Multimedia/Internet Computing
- Vehicle Safety and Control Systems
- Spacecraft Electronics
- Mobile Information Technology

Experience

12/2001-Present Cogenia Partners, LLC

Systems engineering, business development and technical strategy consulting supporting automotive and information technology.

Current Engagements:

- Technical consultant for connected vehicle security credential management system deployment; Sponsored by US DOT FHWA
- Technical consultant for mobile device integration with connected vehicle systems. DOT Research and Innovative Technologies Admin. (RITA)
- Expert witness for:
 - ZTE, related to cell phone navigation systems
 - VW/Audi, related to vehicle WiFi Hotspots
 - Unified Patents, related to mobile device navigation systems
 - Wasica, related to tire pressure monitor systems

Prior Engagements/Projects:

- Developed systems engineering methodology for vehicle E/E systems; Applied methodology on project for Yazaki to reverse engineer the E/E architecture for a 2004 BMW 5 series vehicle.
- Designed novel super capacitor based high performance hybrid vehicle as part of an early stage startup company; Developed performance requirements, conceptual designs and patented integrated electrical system architecture concept.
- Chief System Architect for the Vehicle Infrastructure Integration (VIIC) program (BMW, Chrysler, Daimler Benz, Ford, GM, Honda, Nissan, Toyota, VW); A connected vehicle research program funded by U.S. DOT FHWA.
- Co-Principal investigator for Integrated Advanced Transportation System; A 30+ year future technical feasibility assessment and strategy for U.S. DOT Federal Highway Admin. (FHWA).
- Technical consultant to American Association of State Highway Transportation Officials (AASHTO) for connected vehicle deployment analysis and strategy.
- Technical consultant to Michigan State DOT (Enterprise Pooled Fund) to develop a system architecture and deployment strategy for Rural ITS.
- Telematics delivery architecture development for a Fortune 100 service provider
- Technical consultant to the Vehicle Safety Consortium developing Dedicated

Short Range Communications (DSRC) standards for safety systems;

- Toyota Motor Sales – 10 year technology survey;
- Connected Vehicle Trade Association- Transferred AMI-C specifications to ISO TC 22, TC 204 AND OSGi. Developed OSGi Vehicle Interface Specification;
- Expert witness for:
 - ATT vs. Vehicle IP relating to cell phone navigation systems
 - VW/Audi vs. Beacon, relating to traffic information systems
 - VW/Audi vs. Blitzsafe relating to mobile device integration and mobile audio systems
 - T-Mobile vs. TracBeam relating to wireless location technologies
 - VW/Audi vs. Joao relating to remote service architectures Apple Computer vs. Porto relating to cell phone navigation systems
 - Mercedes vs. Adaptive Headlamp Technologies relating to adaptive headlamps
 - Liberty Mutual, Geico and Hartford vs. Progressive Insurance relating to usage based insurance systems
 - Toyota vs. American Vehicular Sciences (AVS) relating to occupant sensing systems
 - Lenovo and Amazon vs. Pragmatus relating to device tracking
 - Ford in a patent vs. Eagle Harbor Holdings relating to Bluetooth systems and mobile device integration in the vehicle
 - Bentley vs. Cruise Control Technologies relating to adaptive cruise control
 - Google vs. Walker Digital relating to 3D navigation displays
 - Volkswagen/Sirius-XM vs. case relating to traffic information systems
 - Volkswagen, Ford and GM in patent cases vs. Affinity Labs, relating to the iPod interface
 - Honda vs. American Calcar, relating to telematics equipment and user interfaces
 - Alpine, Denso and Pioneer Corporation in an International Trade Commission patent case vs. Honeywell, related to navigation systems
 - BMW vs. American Calcar, relating to telematics equipment and user interfaces

4/2000 to 12/2001 Cogenia, Inc.

President and Chief Executive Officer, Founder

Founded company in 2000 to develop enterprise class data management software system. Responsibilities included development of business concept and plan, corporate administration including financial and legal management, leadership of executive team in product development, fundraising, business development, organizational development, and investor relations. Raised \$2.2M between 8/00 and 5/01 from individuals and funds;

1996 to 4/2000 Toyota Motor Corporation, Japan

Project General Manager, R&D Management Division

Responsibilities included the conceptualization and development of multimedia and new technology products and services for Toyota's future generations of passenger vehicles in the United States and Europe, Heavy emphasis on strategy for information systems, and on development of technical concepts for computing and Internet oriented systems. Led automated vehicle Development program leading up to 1997 Automated Highway Systems (AHS) demonstration in Sand Diego, CA; Supported technology acquisition for hybrid vehicle control systems; Working under direction of Toyota board members,

established the Automotive Multimedia Interface Collaboration (AMI-C), a partnership of the world's car makers to develop a uniform computing architecture for vehicle multimedia systems, and led all early technical, planning and legal work. Provided technical management of technical contracts with Carnegie Mellon University Robotics Lab (Image based collision warning systems), and the development of Toyota's position on the US Intelligent Vehicle Initiative.

1983 to 1996 TRW, Inc.

Held a series of increasingly responsible positions in program management, technology development and business development.

1993 to 1996 TRW Automotive Electronics Group

Director, Advanced Product Planning/Development

Specific responsibilities included leadership and overall management of advanced development programs such as Automotive Radar, Adaptive Cruise Control, Occupant Sensing, In Vehicle Information Systems, and other emerging transportation products; Managed remotely located advanced development laboratory performing approximately \$6M in annual development projects.

1983 to 1993 TRW Space & Electronics Group

Manager, MMIC Products Organization

Developed TRW's commercial GaAs MMIC business. Responsibilities included development of business strategy and business plan, and overall management of customer and R&D programs. Developed extensive international business base and took operation from start-up to \$5M sales per year in under two years. Developed the first single chip 94 GHz Radar (Used for automotive cruise control and anti collision systems).

1979-1983 Teledyne Microwave

Developed high reliability microwave components. Developed CAD tools.

1977-1979 Ford Aerospace, Advanced Development Operation

Designed, tested and delivered microwave radar receiver systems

Education

MSEE Stanford University, 1982

BSEE University of CA, Irvine 1977

TRW Senior Leadership Program 1992

Publications

1. Two Dimensional Vehicle Control for Obstacle Avoidance in Multi-Lane Traffic Environments; Published in the proceedings of the 1998 IEEE International Conference on Intelligent Vehicles.
2. Automotive Multimedia Interface Collaboration; Briefing Presented to the 9th VERTIS Symposium, April 1999, Tokyo Japan.
3. Privacy and Authenticity in Telematics Systems; Published in the Proceedings of the Society of Automotive Engineers World Congress, 1999

4. Automated Highway Systems Acceptance and Liability; Briefing presented to the Automated Vehicle Guidance Demo 98 Conference, Rinjwoude, The Netherlands, June 1998.
5. What is Telematics? Briefing presented at IIR Telematics Conference Scottsdale, AZ, December 2001
6. Advanced Telematics Services: A Hard Look at Reality; Briefing presented at IIR Telematics Conference Scottsdale, AZ, December 2001
7. Consumer Electronics and Telematics; Briefing presented at Eye For Auto Telematics Update Conference Las Vegas, NV, January 2003
8. The Automotive Multimedia Interface Collaboration Software and Network Architecture: Extending the Concept of Platform Independent Computing; Briefing Presented to the Future Generation Software Architectures in the Automotive Domain Conference, San Diego, CA, January 2004
9. Quality, Choice and Value: How New Architectures are Changing the Vehicle Lifecycle; Briefing presented at IEEE Convergence Conference, October 2004
10. Critical Standards for the Next Generation of Telematics Systems and Services; Briefing presented at the Telematics Update Conference, December 2004
11. VII System Overview; Briefing presented To Transportation Research Board, ITS and V-HA Committees 2007 Mid-Year Meeting; July 2007
12. Testing and Development of In-Vehicle Equipment and Private Applications (P08-1634); Briefing presented to the Transportation Research Board Annual Meeting, Washington, DC, January 2008
13. A Comparison of Communications Systems for VII; Presented at the ITS World Congress, New York, NY, October, 2008
14. Vehicle Infrastructure Integration Systems Overview; Presented at the ITS America Annual Meeting, June 1 2009, National Harbor, Maryland
15. Telematics Standards: Logical Next Steps; ITS International, August 2009
16. IntelliDriveSM Overview; ITS International, May 2009
17. Time Synchronization and Positioning Accuracy in Cooperative IntelliDriveSM Systems; Presented at the 2010 ITS America Annual Meeting, June 2010, Houston, Texas
18. Systematic Development of Positioning Requirements for Vehicle Applications; Presented at the 18th World Congress on Intelligent Transportation Systems, November, 2011, Orlando, Florida

19. The Interpretation of GPS Positioning Accuracy and Measurement Integrity in a Dynamic Mobile Environment; Presented at the 18th World Congress on Intelligent Transportation Systems, November, 2011, Orlando, Florida
20. Connected Vehicle Positioning Requirements and Possible Solutions; Presented at the 22nd World Congress on Intelligent Transportation Systems, October, 2015, Bordeaux, France
21. Connected Vehicle Performance Requirements; Presented at the 22nd World Congress on Intelligent Transportation Systems, October, 2015, Bordeaux, France

Patents

1. Mobile Body Reporting Device And Its System; Patent Number: JP11118902; 4/30/1999
2. Multiformat Auto-Handoff Communications Handset; Patent Number: US5649308; 07/15/1997
3. A Communications Terminal Device, A Communications System, And A Storing Medium For Storing A Program To Control Data Processing By The Communications Terminal Device; Patent Number: EP0867850, A3; 09/30/1998
4. Communication System For Controlling Data Processing According To A State Of A Communication Terminal Device; Patent Number: US 6122682 3/23/1998
5. Method And Apparatus For Controlling An Adjustable Device; Patent Number: US5864105; 01/26/1999
6. Automatic Brake Device; Patent Number: JP2000108866; 4/18/2000
7. Visual Field Base Display System; Patent Number: JP2000029618; 01/28/2000
8. Intersection Warning System; Patent Number: US5926114; 07/20/1999
9. Security For Anonymous Vehicular Broadcast Messages; Patent Number: US 7742603 3/27/2006
10. Digital Certificate Pool; Patent Number: US7734050 3/27/2006
11. System, Method And Computer Program Product For Sharing Information In A Distributed Framework; Patent Number: US 7802263 12/15/2003
12. System, Method And Computer Program Product For Sharing Information In A Distributed Framework; Patent Number: US 8566843 12/15/2003
13. System, Method And Computer Program Product For Sharing Information In A Distributed Framework; Patent Number: US 8209705 12/15/2003

APPENDIX B

Scott Andrews, Expert Witness
Petaluma, CA
scott.andrews@cogenia.com
650-279-0242

Summary of Litigation Experience

- **12 years' experience as technical expert and expert witness for patent litigation**
- **Supported over fifty U.S. patent cases**
- **U.S. District Court cases (11 depositions, 4 trials, 1 hearing)**
- **International Trade Commission cases (2 depositions, 2 trials, 1 tutorial)**
- **IPRs and Re-exams (25+ declarations, 7+ depositions)**
- **Targeted prior art searching**
- **Extensive personal library of key references in navigation, telematics and intelligent transportation systems (ITS)**
- **Invalidity and non-infringement analysis and reports**
- **Validity, and infringement analysis and reports**
- **IPR declarations**
- **Support for claim construction, and motions for summary judgment**

Key Practice Areas

- **Automotive Electronics**
- **Automotive Control Systems and User Interface Technologies**
- **Personal Computing and Mobile Electronics**
- **Integration of Mobile Electronics and/or Personal Computing in Automobiles**
- **Location Based Services and Systems**
- **Navigation and Digital Maps**
- **GPS Technology**
- **Traffic Information Systems**
- **Communications Systems (802.11, DSRC, Satellite)**
- **Streaming Audio Technologies (e.g. SDARS)**
- **Hybrid Vehicle Technology**
- **Intelligent Transportation Systems (ITS)**
- **Connected Vehicles**
- **Electronic Toll Collection**
- **Collision Warning and Avoidance**
- **Automated Vehicle Technology**
- **Safety Systems**

Summary of Cases by Practice Area

Location Based Systems/Services	
Client: Andrews Kurth Kenyon (Rep. VW/Audi) Case: West View Research v. VWGOA Case No. 16-cv-2643 JLS-AGS (SCADC) Topic: Mobile information systems Role: Invalidity and non-infringement expert	Client: Renaissance (Rep. Unified Patents) Case: IPR2017-00845 Patent Owner: Virtual Fleet Management Topic: Location based alerts Role: Invalidity expert, IPR declaration
Client: Kenyon and Kenyon (Rep. VW/Audi) Case: Rothschild Location Tech. v. VW/Audi Case No. 1:14-cv-01129 (DEDC) Topic: Vehicle navigation systems Role: Prior art search; Invalidity and non-infringement analysis; Re-exam declaration	Client: Finnegan (Rep. Unified Patents) Case: IPR 2017-00361 Patent Owner; Shipping and Transit Topic: Vehicle Tracking and Telematics Role: Invalidity expert; IPR declaration
Client: Hogan Lovells (Rep. Mercedes Benz) Case: Manitto Technologies v. Mercedes-Benz Topic: Vehicle Telematics/Location Systems Case No. 2:14-cv-1106 (TXEDC) Role: Invalidity Expert	Client: Hogan Lovells (Rep. Mercedes Benz) Case: Proximity Monitoring Innovations v. Mercedes Benz Case No. 14-cv-576-SLR-SRF (DEDC) Topic: Location based alert systems Role: Invalidity Expert; IPR declaration
Client: Kenyon and Kenyon (Rep. VW/Audi) Case: West View Research v. VWGOA Case No. 3:14-cv-02668-BAS-JLB (CASDC) Topic: Mobile information systems Role: Invalidity and non-infringement expert, IPR declarations	Client: Perkins Coie (Rep. M/A COM) Case: M/A COM Tech Holdings v. Laird Tech. Case No. 14-181-LPS (DEDC) Topic: Vehicle Telematics Systems Role: Validity and infringement expert, Depositions (2), Dist. Court hearing testimony
Client: Girardi and Keese (Rep. Zoltar) Case: Zoltar v. Samsung et al Case No. 5:06-CV-00044 JW (CANDC) Topic: Emergency Response Systems Role: Validity expert	

Navigation, GPS, and Traffic Information Systems	
Client: Akin Gump (Rep. ATT and Telenav) Case: Vehicle IP v. ATT and Telenav, et al Case No.09-1007-LPS (DEDC) Topic: Mobile phone location/navigation systems Role: Non- infringement expert, Non-infringement report; Deposition	Client: Wiley Rein (Rep. TomTom) Case: AOT Systems GmbH, et al v. TomTom Case No. 1:12-cv-00528-TSE-IDD (VAEDC) Topic: Handheld navigation systems Role: Prior art search; Invalidity report; Non-infringement report, Deposition
Client: Sterne, Kessler, Goldstein & Fox (Rep. Google) Topic: Navigation system displays Case: Google v. Walker Digital Re-examination No. 95/002,031 Role: Invalidity expert; Re-exam declaration	Client: Sterne, Kessler, Goldstein & Fox (Rep. Telenav) Case: WRE v. Telenav et al. Re-examination No. 90/012,198 Topic: Navigation Systems Role: Invalidity expert for re-exam
Client: Kenyon and Kenyon (Rep. VW/Audi) Case: Beacon GmbH vs Audi, et al	Client: Baker-Hostetler (Rep. TomTom) Case: TomTom v. Harris

Case No. 1:11-cv-00928-GMS (D DE) Re-exam: 95/001,852 Topic: Vehicle navigation systems Role: Invalidity expert; Re-exam declaration	Case No. 3:11-cv-02500-H-MDD (CASDC) Topic: Vehicle navigation and real time traffic systems Role: Prior art search; Invalidity expert; Re-exam declaration
Client: Wiley Rein (Rep. TomTom) Case: Silver State Intellectual Tech. v. TomTom Case No. 2:11-cv-01581-PMP –PAL (NVDC) Topic: Navigation Systems Role: Prior art search; Invalidity expert; Re-exam declaration	Client: Baker-Hostetler (Rep. TomTom) Case: Tom Tom v. Crowd Source Traffic Case No. 2:11-cv-00470 (TXEDC) Topic: Vehicle navigation and real time traffic Role: Prior art search; Invalidity expert; Re-exam declaration
Client: Finnegan (Rep. Pioneer) Case: Pioneer v. Garmin Case No. ITC: 337-TA-694 Certain Multimedia Display and Navigation Devices and Systems, Components Thereof, And Products Containing Same Topic: Handheld navigation systems Role: Claim construction report Technical tutorial for court; Deposition; Trial testimony	Clients: Kenyon and Kenyon (Rep. VW/Audi) Kramer Levin (Rep. Sirius/XM) Case: Volkswagen Group et al v. Triangle Software Case No. 1:10-cv-01457-CMH –TCB (VAEDC) Topic: Vehicle navigation and real time traffic systems Role: Invalidity and non-infringement expert, Invalidity and non-infringement reports; Deposition
Client: Morrison and Foerster (Rep. TomTom) Case: TomTom vs Tremontaine Case No. 1:11-cv-00918-LMB –TCB (VAEDC) Topic: Vehicle navigation and real time traffic Role: Technical Consultant Activities: Prior art search; Invalidity expert	Clients: Finnegan (Rep. Pioneer) Brinks Hofer (Rep. Alpine) Harness Dickey and Pierce (Rep. Denso) Case: Honeywell v. Alpine et al. Case No. ITC 337-TA-657 Certain Automotive Multimedia Display and Navigation Systems, Components Thereof, and Products Containing the Same) Topic: Navigation systems, mapping and GPS Role: Invalidity, non-infringement, and domestic industry practice reports; Witness statements; Deposition; Trial testimony
Client: Pillsbury Winthrop (Rep. ZTE) Case: Vringo v. ZTE IPR 2015-00706 Topic: Cell phone location/navigation service Role: Prior art search; IPR declaration	Client: Morrison-Foerster (Rep. TomTom) Case: Mobile Traffic Systems v. TomTom Case No. 5:07-CV-00653-CLS (ALNEDC) Topic: Wireless Traffic Information Systems in Handheld Navigation Devices Role: Prior art search, and initial invalidity and non-infringement arguments

Personal Computing and Mobile Electronics

Clients: Akin Gump (Rep. Lenovo) Fish and Richardson (Rep. Samsung) Kenyon and Kenyon (Rep. Sony) King and Spaulding (Rep. Nokia) Farella (Rep. Amazon) Case: Pragmatus v. Amazon et al. Case No. ITC 337-TA-905 Certain Wireless Devices Including Mobile Phones and Tablets II) Topic: Computer Location Systems Role: Invalidity expert, reports; IPR declarations	Client: Haynes Boone (Rep. Apple) Case: Porto Technology v. Apple Computer IPR for US6233518, and US6532413 (Associated Case No. 2:15-cv-457 (TXEDC) Topic: mobile phone location/ navigation systems Role: Invalidity expert; IPR declaration
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(Also included IPR declaration for Amazon via Fenwick and West)	
Client: Baker Botts (Rep. T-Mobile) Case: TracBeam v. T-Mobile Case No. 6:11-cv-00096-LED (TXEDC) Topic: Mobile device location systems Role: Claim construction expert; IPR declaration; Deposition	Client: Ropes & Gray (Rep. Motorola) Case: Motorola Mobility v Microsoft Case No. 1:10-cv-24063-FAM (FLSDC) Topic: Location based cellular phone browsers Role: Validity and infringement expert; Validity and infringement reports; Deposition

Automotive Infotainment Systems, Integration of Mobile Electronics and/or Personal Computing in Automobiles, Streaming Audio Technologies (e.g. SDARS)	
Client: Andrews Kurth Kenyon (Rep. VW/Audi) Case: Blitzsafe v. VWGOA Case No. 2:15-cv-01274-JRG-RSP (TXEDC) Topic: Vehicle-mobile device integration systems Role: Invalidity and non-infringement expert; Invalidity and non-infringement reports; IPR declarations	Clients: Wilmer Hale (Rep. Ford) Brooks Kushman (Rep. Ford) Case: Eagle Harbor Holdings/Medius v. Ford Motor Co. Case No. 3:11-cv-05503-BHS (WAWDC) Topic: Vehicle Infotainment systems Role: Invalidity and non-infringement expert, Invalidity and non-infringement reports; Deposition; Jury trial testimony
Client: Kenyon and Kenyon (Rep. VW/Audi) Case: Volkswagen Group et al v. Affinity Labs of Texas Case No. 9:08-cv-00164-RC (TXEDC) Topic: Automotive systems (primarily portable music player interface systems) Role: Prior art search, Invalidity and non-infringement reports; Deposition; Jury trial testimony	Client: Kenyon and Kenyon (Rep. Toyota) Case: Affinity Labs of Texas, v. Toyota Motor North America Inc., et al., Case No. 6:13-cv-365 (TXEDC) IPR 2014-01336 Topic: Vehicle-mobile device integration systems Role: Invalidity and non-infringement expert, IPR Declaration
Client: Brooks-Kushman (Rep. Ford) Steptoe (Rep. General Motors) Case: Affinity Labs of Texas v. BMW et al. 9:08-cv-00164-RC (TXEDC) Topic: Vehicle Infotainment systems/portable device integration Role: Invalidity expert (GM), Invalidity and non-infringement expert (Ford), Invalidity (Ford and GM) and non-infringement (Ford) reports; Deposition	Client: Dykema Gossett (Rep. Ford) Case: Joseph J. Berry v. Ford Motor Company and Ford Global Technologies Case No. 5:11-cv-10569 (MIEDC) Topic: Vehicle Telematics Systems Role: Analyzed documentation relative to claimed inventorship

Automotive Electronics, User Interfaces, Safety Systems, Hybrid Vehicles, Collision Warning and Avoidance, Automated Vehicles	
Client: Kenyon and Kenyon (Rep. Toyota) Case: Signal IP v. Toyota Motor Corp. IPR 2016-01382 Topic: Mobile Automotive occupant sensing systems Role: Invalidity expert; IPR declaration; Deposition	Client: Andrews Kurth Kenyon (Rep. VW/Audi) Case: Paice v. VWGOA Case No. ITC 337-TA-998: Certain Hybrid Electric Vehicles and Components Thereof Topic: Hybrid Vehicle Systems Role: Invalidity and non-infringement expert reports; IPR declarations

<p>Client: Fish and Richardson (Rep. Honda) Topic: Automotive systems (primarily user interface systems) Case: American Calcar v. Honda Case No. 06-cv-2433-DMS (CASDC) Role: Prior art search; Invalidity and non-infringement reports, rebuttal reports, consulting and review of motions, consulting and review of trial material development; Deposition; Jury trial testimony.</p>	<p>Client: Howrey Simon (Rep. BMW) Opposing Counsel: Knobbe Martens Case: American Calcar v. BMW Case No. 04-cv-0614 DMS (CASDC) Topic: Automotive systems (primarily user interface systems) Role: Prior art search; Invalidity and non-infringement reports</p>
<p>Client: Ropes & Gray (Rep. Liberty Mutual Insurance Company) Case: Progressive Insurance v. Liberty Mutual Insurance et al. CBM2012-00002, 00003, 00004, and 00009 Topic: Automotive telematics/insurance systems Role: Invalidity expert; CBM declarations, Depositions (2)</p>	<p>Client: Kenyon and Kenyon (Rep. VW/Audi) Case: Joao Control and Monitoring Systems v. VWGOA IPR2015-01645 Topic: Vehicle Telematics Systems Role: Invalidity expert; IPR declaration; Deposition</p>
<p>Client: Hogan Lovells (Rep. Mercedes Benz) Case: Entry Systems LLC v. Mercedes-Benz 2:14-CV-01090-JRG (TXEDC) Topic: Vehicle Entry Systems Role: Invalidity expert; IPR declaration</p>	<p>Client: Kenyon and Kenyon (Rep. Toyota) Case: American Vehicular Sciences v. Toyota Motor Corp. Case No. 6:12-cv-404-LED-JDL (TXEDC) Topic: Vehicle Telematics Systems Role: Prior art search, IPR declarations, Deposition</p>
<p>Client: Kenyon and Kenyon (Rep. VW/Audi) Opposing Counsel: Unknown Topic: Vehicle Telematics Systems Case: Velocity v. VWGOA Case No. 1:13-CV-8418 (ILNDC) Role: Invalidity expert, Technical consultant for re-exam</p>	<p>Client: Kacvinsky Daisak Bluni (Rep. Littlefuse) Case: FusiLamp, et al v. Littelfuse, et al. IPR for US5598138 Topic: Automotive fuse systems Role: Invalidity expert; IPR declaration</p>
<p>Client: Kenyon and Kenyon (Rep. VW/Audi) Opposing Counsel: Unknown Case: Cruise Control Technologies v. VW/Audi, et al Case No. 1:12-cv-01753-UNA (DEDC) Topic: Automotive cruise control display systems Role: Prior art search; Re-exam support</p>	<p>Client: Quinn Emmanuel (Rep. Mercedes Benz) Case: Adaptive Headlamp Technologies, Inc. v. Mercedes-Benz USA IPR 2016-00501 Topic: Automotive headlamp technology Role: Invalidity expert; IPR declaration</p>
<p>Client: Dewey & Le Bouef (Rep. BMW) Case: Stragent v. BMW Case No. 6:10-CV-227 (TXEDC) Topic: Automotive adaptive cruise control systems Role: Invalidity expert</p>	<p>Client: Howrey Simon (Rep. Isuzu) Case: Isuzu Motors et al v. MHL TEK Case No. 2:08-cv-125 (TXEDC) Topic: Automotive tire pressure monitor Systems Role: Technical consultant; Prior art search</p>
<p>Client: Fish and Richardson (Rep. Wasica) Case: Wasica v. Schrader and Continental IPR2014-00295 Topic: Tire Pressure Monitoring Systems Role: Validity and infringement expert; IPR declaration; Deposition</p>	<p>Client: Greenberg Traurig (Rep. Epsilon) Topic: Automotive Rear Seat Entertainment Case: Epsilon Electronics v. Audiovox Case No. 2:03-cv-06235 (NYEDC) Role: Validity and infringement expert</p>

Intelligent Transportation Systems (ITS), Connected Vehicles, Electronic Toll Collection, Communications Systems (802.11, DSRC, Satellite)	
Client: McKool Smith (Rep. Los Angeles Metropolitan Transportation Commission) Case: Transport Technologies v. L.A. County Metro. Transp. Auth., IPR 2016-01077 Topic: High Occupancy Toll Lanes Role: Invalidity expert; IPR declaration; Deposition	Client: Renaissance (Rep. Unified Patents) Case: Unified Patents v. Sisvel IPR 2017-00565 Patent Owner: Sisvel Topic: Traffic Management Systems Role: Invalidity expert, IPR declaration
Client: Leffert Jay & Polglaze (Rep. Emtrac) Topic: Traffic Signal Preemption Systems Case: GTT v. Emtrac Case No. 0:10-cv-04110-ADM-JJG (MNDC) Role: Prior art search; Invalidity and non- infringement reports; Deposition; Jury trial testimony	Client: Mayer Brown (Rep. Cinterion) Case: M2M Solutions LLC v. Cinterion Case No. 1:12-cv-00031 (DEDC) Topic: M2M Communications Systems Role: Technical Consultant